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The International Institute of Agriculture has just published its 30th International Yearbook of Agricultural Legislation, which contains the principal laws regarding agriculture, grouped in systematic order, promulgated in the different countries during the year 1940.

The Yearbook opens with a full and useful introduction in which are developed the same arguments which constitute the fundamental themes of the chief agricultural laws of the past year; these are: the codification of agrarian laws; the intervention of the State as regards compulsory crop growing and the transfer of landed property, the formation and protection of small farming; the renting of rural property; legal discipline of transferable securities as regards agricultural credit, the regulation of basic wages in farming.

The comparative study of agricultural legislation in the year 1940 indicates, despite the present abnormal situation, a notable advance on previous years in respect to the legislative activity intended to expand legal institutions in the field of agriculture.

JUST OUT :—

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In view of the large number and variety of the publications of the International Institute of Agriculture, it was considered opportune to facilitate the utilization of the information contained therein by publishing an analytical index comprising the publications issued during the decennial period 1930-1939.

The first part of this index contains a numbered list of all the yearbooks, periodicals and monographs published during this period.

The second part regards the contents of the *International Review of Agriculture* and its four parts (1. *Monthly Bulletin of Agricultural Economics and Sociology* — 2. *Monthly Crop Report and Agricultural Statistics* — 3. *Monthly Bulletin of Agricultural Science and Practice* — 4. *International Bulletin of Plant Protection*).

The third part consists of the full classification of the material treated in the various publications.

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INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1941 No. 9

DISCOVERIES AND CURRENT EVENTS *

PORTUGUESE EAST AFRICA.

Movements of the Red Locust, *Nomadacris septemfasciata* †

The following is a brief summary of the observations made during the period April-September 1940:—

April. — Hoppers in two districts of the Province of Nyassa; swarms passed over the Provinces of Zambezi and Sul do Save as well as in the Territory of Manica and Sofala.

May. — Swarms passed over the three provinces and the aforesaid Territory.

June. — Swarms passed over the three provinces; no activity in the Territory.

July. — As previous month.

August. — Swarms passed through the three provinces; scattered movements throughout the Territory.

September. — Nothing to report in the Province of Nyassa; passage of swarms in the other two provinces; locusts found scattered in various parts the Territory.

ARGENTINE REPUBLIC.

Wilting of the Terminal Bud in Potato §

During the years 1937-38 and 1938-39, potato crops suffered severe damage, especially the Green Mountain variety, the most extensively cultivated, owing to the appearance of a new disease called 'marchitez del brote terminal' (wilting of the terminal bud), its cause being unknown.

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from Sr. DOMINGOS FRIAS, Acting Chief of the Section of Agricultural and Forestry Zoology, Lourenço Marques, transmitted to the Institute by the 'Repartição Técnica de Agricultura', Colony of Mozambique.

§ Communication from the official correspondent of the Institute, Mr. JUAN B. MARCHIONATTO, Agricultural Engineer, Director of 'Sanidad Vegetal', Ministry of Agriculture, Buenos Aires, Argentine Republic.

The ' Dirección de Sanidad Vegetal ' of the Ministry of Agriculture took immediate steps to deal with this important problem and the agricultural engineers Alfredo M. Offermann and Enrique R. Vitoria began investigations.

These two officers have studied the characteristics of the disease, conditions of transmission, physical and chemical properties of the virus which causes the disease and its classification.

The most characteristic symptoms of the disease are: etiolation of the bud tip, ring-shaped markings on the leaves and necrosis of the buds, aerial stalks and tubers.

From studies on transmission, it was found that the virus producing the disease can be filtered and successfully inoculated into the potato, tomato, tobacco and peppers, with difficulty into the dahlia; no results were obtained with *Calla*, lettuce, *Tropaeolum*, *Zinnia*, parsley, *Calceolaria* and *Petunia*.

The filtered juice of diseased plants remains infective for over two weeks and can stand dilution to 1 in 1000. The temperature of activity is above 65° C. The virus concentration is stronger in the leaves than in the stalks; it was also found that plants showing slight symptoms contain a virus having the same pathogenic capacity as badly infected plants. Bichloride of mercury only renders the virus inactive after five days. The virus purified by the Bawden and Pirie method has the property of deviating polarized light. According to these characteristics, this virus may be classified in the *Solanum Virus* 1 Orton according to K. M. Smith.

The experiments have also shown that the tubers even if severely attacked only spread virus to a very limited extent.

SPAIN.

Progress of the Colorado Beetle in the Country *

Seeing that the invasion of the Colorado beetle (*Leptinotarsa decemlineata*) in France was spreading towards the south with foci in the frontier departments bordering Spain, an imminent appearance of this pest in Spanish territory was to be expected.

The first focus was reported in September, 1935 in the commune of Massanet de Cabrenys, Gerona Province, near the French frontier. Measures were taken to prevent all agricultural relations with the neighbouring zones: no agricultural products whatsoever allowed to be sent outside the commune; State purchase of entire potato crop for destruction; installation of netting in the river to prevent any insects being carried elsewhere by water; continual arsenical dusting and disinfection of the soil with carbon disulphide; establishment of a girdling zone where the cultivation of the potato and other Solanaceous plants which can serve as host plants for this insect was prohibited, at the same time, a control and protection zone extended along all the frontier zone from

* Communication from the official correspondent of the Institute, Sr. AUGUSTÍN ALFARO, Agricultural Engineer, Director of the Phytopathological Station, Zaragoza, Spain.

the Cantabrian Mountains to the Mediterranean. An intensive propaganda campaign was carried out by means of lectures, leaflets, brochures, postcards and posters. Despite these various measures, further invasions from France (some recognized tardily) were reported in the Provinces of Gerona, Guipúzcoa, Navarra and Lérida. Infection spread from the North to the South of these provinces and to the neighbouring provinces.

It may now be taken that the Provinces of Navarra and Gerona are completely invaded and foci are scattered throughout a good part of the Provinces of Guipúzcoa, Alava, Huesca and Zaragoza.

The control methods employed are:

Regulation of trade in potatoes and inspection of crops. — When Colorado beetle foci are discovered, an 'invaded zone' is delimited from which no potatoes, peppers, tomatoes or egg-plants can be removed, nor any other plants and parts of plants (trees, shrubs, tubers, bulbs, cuttings, etc.); this is also the case for soil, manure, etc.

The zone surrounding the invaded zone and 25 km. wide is the 'protection zone' from which the above-mentioned products may be exported but only from November 1 up to March 15 and observing certain precautions. The zone, also 25 km. wide, outside the protection zone is known as the 'precaution zone'.

In these three zones, at various periods, the potato fields are inspected by the growers themselves, the local inspectors nominated by the communes, and the cantonal inspectors who apply immediately the orders of the provincial agricultural Committees, of which the crop diseases and pests Sections ('Secciones de Fitopatologia y Plagas del Campo') are commissioned with the execution of the control campaign; the activity of these Committees is coordinated by a Delegation under the Department of Agriculture.

In the invaded and protection zones, the cultivation of the potato simultaneously with any other food crop is prohibited. In the farms in the former zone where an invasion was noted during the previous year, the potato is sown widely spaced and an endeavour is made to keep leaves near the old foci to feed the insects and thus prevent them from spreading.

Treatment of foci. — The foci where the plants are few are destroyed *in situ* by fire after having been previously soaked with petrol, using a pressure pump. Carbon disulphide is used for disinfecting the soil. In the case of larger foci, hand collection is carried out and, at intervals, frequent dusting with diplumbic arsenic at 1 per cent.

Rotenone products are used for treating tomatoes and egg-plants.

Preventive treatment. — Within an area of 500 m. about the foci, the potato fields are throughly treated with 1 per cent. diplumbic arsenic dusts.

The extension and application of some of these control measures were checked by the events of the Spanish Civil War as also by the present war which restricts the efficacity of the proposed control plan.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Chile. — For phytosanitary purposes Decree No. 40, dated January 24, 1941, prohibits the dispatch of certain plant products in the fresh state to South Antofagasta. (*El Agricultor del Norte*, La Serena, abril de 1941, año 25, nº 4, págs. 138 y 139).

Colombia. — Owing to an error in the text, the Law No. 40 of November 18, 1940 [See this *Bulletin*, 1941, No. 4, p. 74] has again been published. (*Diario Oficial*, Bogotá, 21 de noviembre de 1940, año LXXVI, núm. 24518, pág. [497]).

*** Decree No. 110 of January 24, 1941 contains the measures relative to the organization of the control of banana diseases and pests in the Department of Magdalena. (*Ibid.*, 29 de enero de 1941, núm. 24574, pág. 305).

Ecuador. — Special Regulation No. 30 of November 11, 1940 lays down different measures relative to the organization and execution of the control of fruit fly [*Anastrepha*] and other pests and diseases found in fruit orchards and nurseries. (*Registro Oficial*, Quito, 15 y 16 de noviembre de 1940, año I, núms. 62 y 63, págs. [335] a 338).

Italy. — Ministerial Circular No. 62 of April 24, 1941 authorizes the hunting of sparrows by any means whatsoever with a view to protecting the grain crops. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 11 maggio 1941, Anno XIII, n. 14, p. 843).

*** With a view to preventing any delay or check in sending abroad potatoes produced in Italy, Ministerial Circular No. 68 of May 4, 1941 recapitulates the measures at present in force regarding the import of these tubers into the following countries:— Germany, Protectorate of Bohemia and Moravia, Slovakia, Hungary, Denmark, Belgium, Sweden, Norway and Switzerland. (*Ibid.*, 21 giugno 1941, n. 18, pp. 1036-1041).

*** Ministerial Circular No. 69 of the same date regards the phytosanitary regulations to be followed for the export of fresh cherries in Germany, and other countries such as Belgium and the Netherlands. (*Ibid.*, pp. 1035-1036).

*** Royal Decree Law No. 412, dated May 15, 1941, modifies the custom duties on potassium and sodium cyanides. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 31 maggio 1941, anno 82º, n. 127, pp. 2118-2119).

*** By Provision P. 68 of May 21, 1941, the Ministry of Corporations has established the price of the anticryptogamic product 'Ramital'. (*Ibid.*, 30 maggio 1941, n. 126, p. 2115).

*** Royal Decree No. 489 of May 29, 1941 provides for the reorganization of the Services as well as the revision of the duties of the personnel of the Ministry of Agriculture and Forests.

Among the various measures contained therein, the following refer more directly to plant protection.

The Upper Board of Agriculture and Forests, consultative technical organ of the Ministry, has been instituted.

Section I of this Board is concerned with all activities regarding agricultural experimentation and phytopathology (plant diseases and pests). This Section, as regards all matters concerning the protection of cultivated plants and relative measures, comprises: (1) the Director General of Public Health; (2) a Delegate of the Fascist National Institute for foreign trade; (3) a Delegate of the National Federation of Provincial Consortia among the agricultural producers; (4) two experts in phytopathology selected among the directors of the Royal Institute for Experimentation in Plant Pathology at Rome and the R. Institute for Experimentation in Agricultural Entomology at Florence and the professors of plant pathology and entomology at the Royal Universities; a director of the regional Observatory for plant diseases.

It is also the province of the Board, joined in general assembly, to examine proposals regarding the declaration of compulsoriness in the case of destructive measures and the exclusive adoption of determined means and methods in the control of plant diseases and pests.

Section I of the Board passes opinion on the technical and economic problems connected with agricultural experimentation and the protection of cultivated plants from pest and disease attack. In particular, the opinion of the Board must be considered, *inter alia*, on: (1) the programs of work relative to protective measures against diseases, parasites and pests in general of crops and agricultural products; (2) ascertaining of the conditions for the direct undertaking of locust control, on the part of the Ministry.

The Section also sees to the compilation or modification of:—

(*a*) the list of the parasites of plants, part of plants and seeds, considered harmful or suspected of being so to agriculture; (*b*) the measures to be prescribed for preventing the spread of parasites; (*c*) the list of disinfection and control methods and measures to be adopted against plant diseases and pests; (*d*) the eventual measures to be adopted in the case of plants, parts of plants, seeds and other plant products having to be destroyed; (*e*) list of plants, parts of plants, seeds and other plant products, hosts or vectors of harmful or suspected plant diseases and pests, as regards both internal movements and imports or exports; (*f*) the measures to be followed in dubious cases regarding the presence or nature of a disease, with the necessity of ordering quarantine for a certain period; (*g*) the provisions relative to the use of special packing for plants,

parts of plants, seeds and other plant products which may act as hosts or vectors of harmful or suspected diseases.

On the sixtieth day after publication of this Decree, *inter alia*, the Committee for plant protection against diseases ceases to function.

In the provincial Inspectorates of Agriculture of those provinces which, not more than sixty in number, will be established by Ministerial Decree, a specialized Section for plant protection will be instituted. To each of these Sections, which may also be established gradually, will be appointed an agricultural technician recognized as specialist in phytopathology.

Within two years of the entering into force of this Decree, some of the present agricultural experiment Stations are to be changed into demonstration farms or into organizations for the functions regarding plant diseases.

Until the Royal Institutes for Experimentation in Agricultural Entomology at Florence and in Plant Pathology at Rome are instituted, the directors of the present Royal Stations of Agricultural Entomology at Florence and Plant Pathology at Rome may be called upon to take part in Section I of the Upper Board of Agriculture and Forests, in their capacity as experts in phytopathology. (*Ibid.*, 16 giugno 1941, n. 139, pp. 2352-2370).

*** A Ministerial Decree of May 29, 1941 declares the territories of the communes of Naples and Sorrento infested with the Argentine ant [*Iridomyrmex humilis*] and makes the control of this insect compulsory. *

*** A Ministerial Decree of June 5, 1941 renders the control of the olive fly [*Dacus oleae*] compulsory in the commune of Pisciotta, Province of Salerno during the current year. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 1° luglio 1941, anno XIII, n. 19, p. 1076).

*** A Ministerial Decree of July 1, 1941 renders compulsory during the year 1941, the control of the olive fly [*Dacus oleae*] in the territories of the communes of Alghero and Olmedo, Province of Sassari, by means of arsenical dusts. *

*** A Ministerial Decree of July 26, 1941 establishes the modalities for the import from abroad, as an exceptional case, of potatoes intended exclusively for planting for the 1941-42 season.

The import of tubers from crops affected by virus diseases or coming from localities attacked by *Leptinotarsa decemlineata, Synchytrium endobioticum, Phthorimaea operculella, Heterodera rostochiensis, Epitrix cucumeris* and other parasites not allowed by the supervising organizations of the producing countries, is prohibited. (*Gazzetta Ufficiale del Regno d'Italia*, Roma 31 luglio 1941, anno 82°, n. 179, pp. 3049-3051).

* Communication from the Ministry of Agriculture and Forests, Rome, to the International Institute of Agriculture.

Norway. — A Decree of May 15, 1941 prohibits the treatment of plants in the flowering stage with preparations containing arsenic. (*Norsk Lovtidend*, Oslo 23 mai 1941, nr. 20, side 415).

Portugal. — 'Portaria' No. 9.792, dated May 8, 1941, declares compulsory the control of the codling moth (*Carpocapsa* [*Cydia*] *pomonella*), the pear scab (*Fusicladium pirinum*) and other diseases attacking the orchards in the parishes of Abidos (S. Pedro) and Amoreira, commune of Obidos, as well as in the parish of Roliça, commune of Bombarral. (*Diário do Govêrno*, Lisboa, 8 de maio de 1941, I Série, núm. 705, pág. 410).

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[This book is the second edition of the volume by the same author published over twenty years ago.
The author has revised practically the whole book, bringing it up to date, re-arranging the subject matter and including all the principal agricultural plants, the chief diseases of which are briefly described with indication of the control measures employed. It was not the author's intention to furnish a treatise but a simple guide to aid in recognizing the common diseases and pests of field crops.
Another 16 coloured plates have been added to the 48 in the original edition.
The volume comprises, besides the general chapter on plant diseases, another fifteen on the diseases of the following plants: cereals, beets, potatoes, tomatoes, tobacco, rape, colza, seed and forage legumes, hemp, flax, grapevine, fruit plants, mulberry, olive, citrus, chestnut, walnut and elm].

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